

APRIL/MAY 2025

**CBC51/FBC51 — ENZYMES AND
INTERMEDIARY METABOLISM**

Time : Three hours

Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is IU?
2. Explain the role of an active site in an enzyme.
3. Name an amphibolic pathway in carbohydrate metabolism.
4. Interpret the role of uncouplers in phosphorylation.
5. What is omega oxidation of fatty acid?
6. Outline the structure of cholesterol.
7. Define decarboxylation.
8. Outline the role of PLP in protein metabolism.
9. Recall the names and structures of one purine and one pyrimidine nucleotide.
10. Show the precursors of de novo pathway of nucleotide metabolism.



SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Identify the different types of enzyme inhibitions.

Or

- (b) Examine the factors that affect the activity of enzymes.

12. (a) Identify the sequence of events in Oxidative phosphorylation.

Or

- (b) Examine the role of energy carriers in ETC.

13. (a) Identify the pathway of beta oxidation of fatty acids.

Or

- (b) Examine the regulation of cholesterol biosynthesis.

14. (a) Identify the pathway by which epinephrine is formed from nor epinephrine.

Or

- (b) Examine the steps in the formation of serotonin.

15. (a) Identify and differentiate the nucleotides in DNA from RNA with structures.

Or

- (b) Examine the degradation of pyrimidine nucleotides.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain the IUB system of enzyme classification.

17. Evaluate the pathway for the complete oxidation of glucose.

18. Explain the biosynthesis of lipids. How is it regulated?

19. Elaborate on the role of transaminases in the degradation of proteins.

20. Discuss the biosynthesis of pyrimidines.

